

Claims:

1. A device for a passive module of optical gratings and communication, comprising:
 - a first housing made of material with low coefficient of thermal expansion, a longitudinal receiving recess being defined at the first housing, a tunable mechanism including an elastic recess is formed with the first housing and a tunable member which can tune width of the elastic recess through pressing the first housing, a groove is defined near the elastic recess in the first housing for receiving an end of the FBG;
 - a second housing made of material with negative coefficient of thermal expansion and received in the receiving recess of the first housing, a slot being longitudinally defined in the second housing for receiving another end of the FBG.
2. The device for a passive module of optical gratings and communication as claimed in claim 1, wherein the first housing is generally rectangular with four longitudinal surfaces and two lateral surfaces.
3. The device for a passive module of optical gratings and communication as claimed in claim 2, wherein the longitudinal receiving recess is defined at the upper longitudinal surface of the first housing, extending from one of the lateral surfaces.
4. The device for a passive module of optical gratings and communication as claimed in claim 3, wherein the second housing is fittingly received in the receiving recess of the first housing, and further fitted near the elastic recess in the receiving recess of the first housing by agglutinant .
5. The device for a passive module of optical gratings and communication as claimed in claim 4, wherein the tunable mechanism is integrally formed with the other lateral surface and is generally L-shaped with a lateral sidewall and a longitudinal bottom wall connected with the sidewall, and wherein the elastic recess is defined between the other lateral surface of the first housing and the sidewall of the tunable mechanism and is

generally U-shaped.

6. The device for a passive module of optical gratings and communication as claimed in claim 5, wherein the second housing projects from the upper surface of the first housing.
7. The device for a passive module of optical gratings and communication as claimed in claim 6, wherein the sidewall of the tunable mechanism projects from the upper surface of the first housing and is substantially at the same height as the second housing.
8. The device for a passive module of optical gratings and communication as claimed in claim 7, wherein a protrusion extends from the sidewall of the tunable mechanism into the elastic recess, and a screw hole is defined through the sidewall and the protrusion.
9. The device for a passive module of optical gratings and communication as claimed in claim 8, wherein the tunable member is a screw which engagingly extends through the screw hole and abuts against the other lateral surface of the first housing whereby the width of the elastic recess is tunable through the tunable member pressing the first housing.
10. The device for a passive module of optical gratings and communication as claimed in claim 1, wherein the first housing is made of Kovar.
11. The device for a passive module of optical gratings and communication as claimed in claim 1, wherein the second housing is made of ceramic.
12. The device for a passive module of optical gratings and communication as claimed in claim 1, wherein the FBG is fixed in the groove and an end of the slot by agglutinant.
13. The device for a passive module of optical gratings and communication as claimed in claim 8, wherein the width of the groove and the slot is substantially equal to the diameter of the FBG.
14. The device for a passive module of optical gratings and communication as

claimed in claim 7, wherein the tunable member further includes a clutch and an actuator connected with the clutch thereby automatically tuning the width of the elastic recess.